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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,227	08/08/2001	David K. Bainbridge	50325-0536	3142

29989 7590 02/23/2006

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EXAMINER

SIDDIQI, MOHAMMAD A

ART UNIT PAPER NUMBER

2154

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,227

Applicant(s)

BAINBRIDGE ET AL.

Examiner

Mohammad A. Siddiqi

Art Unit

2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-32 are presented for examination. Claims 31 and 32 are new.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/01/2005 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11 and 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno et al. (6,578,088) (hereinafter Ohno) in view of Tominaga et al. (6,880,000) (hereinafter Tominaga).

5. As per claim 1, Ohno discloses a machine-implemented method for management of network addresses (col 2, lines 10-15) comprising the steps of:

determining an address utilization state of a network (105, fig 1, in-use address, 57, fig 5, col 2, lines 26-34; col 7, lines 33-36), and

performing a specified action on address (600-800, fig 6, col 4, lines 4-21) from the certain address space in response (102, fig 1) to the address utilization state (storing examination result, 57, fig 5, col 2, lines 26-34).

Ohno does not explicitly disclose the address utilization state is based on a percentage of a certain address space **allocated** to a network service provider, in use by network access devices used by subscribers of the network service provider. However, Tominaga the address utilization state is based on a percentage of a certain address space **allocated** to a network service provider (elements of Fig 12, col 2, lines 38-58), in use by network access devices used by subscribers of the network service provider (address utilization rate, computing allocation factor, col 22, lines 33-67). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Ohno and Tominaga. The motivation would have been assigning network addresses based on network address utilization rate.

6. As per claim 2, the claim is rejected for the same reasons as claim 1, above. In addition, Ohno discloses comparing the address utilization state (Diamond block represents condition, 901, fig 9) with condition information (901,fig 9);

upon the address utilization state (in-use represents state, 901, fig 9) meeting the condition (901, fig 9), completing the step of performing a specified action wherein the specified action is associated with the condition (square block represents an action, 902, 901, fig 9); and

upon the address utilization state not meeting the condition (901, fig 9), completing the step of performing a specified action (902, fig 9) wherein the specified action is a null (col 6, lines 36) action (900-902, fig 9, col 11, lines 40-49).

7. As per claim 3, the claim is rejected for the same reasons as claim 1, above. In addition, Ohno discloses the action is allocating a group of specific addresses to a particular network (106, fig 1), for assigning the addresses to devices on the particular network (803, fig 8, col 4, lines 23-37).

8. As per claim 4, the claim is rejected for the same reasons as claim 1, above. In addition, Ohno discloses the action is reconfiguring addresses (Dynamic Host Configuration protocol includes configuration and

reconfiguration, col 4, lines 10-19) on a particular network including more than one address block, resulting in decreasing the number of address blocks associated with the particular network (103, 102, 105 fig 1, col 5, lines 60-67 and col 6, lines 1-14, lines 20-26, not known by the DHCP server).

9. As per claim 5, the claim is rejected for the same reasons as claim 1, above. In addition, Ohno discloses the addresses are reconfigured based on an existing address block (prevent a duplicate address from being distributed, col 6, lines 1-20).

10. As per claim 6, the claim is rejected for the same reasons as claim 1, above. In addition, Ohno discloses the action is reclaiming specific addresses from a particular network, resulting in making the addresses unassignable to devices on the particular network (prevent a duplicate address from being distributed by using distribution status field, col 6, lines 1-19).

11. As per claim 7, the claim is rejected for the same reasons as claim 1, above. In addition, Ohno discloses the action is notifying a network access manager that an address utilization condition is met and awaiting a response

from the network access manager as to further action to perform (col 10, lines 3-17).

12. As per claim 8, the claim is rejected for the same reasons as claim 1, above. In addition, Ohno discloses the step of determining the state of address utilization comprises querying a Dynamic Host Configuration Protocol (DHCP) server (101, fig 1, col 5, lines 8-17).

13. As per claim 9, the claim is rejected for the same reasons as claim 1, above. In addition, Ohno discloses receiving condition information (901, fig 9) describing a network address utilization state for triggering an action (902, fig 9, col 9, lines 46-63);

receiving action information describing an action (600-800, fig 6) associated with the condition (901, 902, fig 9); determining an address utilization state of a network (900,901,fig 9, col 9, lines 46-63), and

performing the specified action in response to the address utilization state meeting the condition (902, 901, fig 9, col 9, lines 46-63).

14. As per claim 10, the claim is rejected for the same reasons as claim 1, above. In addition, Ohno discloses the description of the condition and the specification of the action are received from a broadband network access

provider (there must be broadband access provider, 114, fig 1) that is responsible for distributing network address to devices used by subscribers of a network service provider that provides network access through the access of the network access provider (100, fig 1, must be broadband provider to mobile terminals).

15. As per claim 11, Ohno discloses the claim is rejected for the same reasons as claim 8, above.

16. As per claim 23, the claim is rejected for the same reasons as claim 1, above.

17. As per claim 24, the claim is rejected for the same reasons as claim 3, above.

18. As per claim 25, the claim is rejected for the same reasons as claim 4, above.

19. As per claim 26, the claim is rejected for the same reasons as claim 6, above.

20. As per claim 27, the claim is rejected for the same reasons as claim 7, above.

21. As per claim 28, the claim is rejected for the same reasons as claim 8, above.

22. As per claim 29, the claim is rejected for the same reasons as claim 1, above

23. As per claim 30, the claim is rejected for the same reasons as claim 9, above.

24. Claims 12-22, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno et al. (6,578,088) (hereinafter Ohno) in view of Tominaga et al. (6,880,000) (hereinafter Tominaga) as applied to claims 1-11 and 23-30 above, and further in view of Fijolek et al. (6,223,222) (herein after Fijolek).

25. As per claim 12, Ohno discloses defining to an address assignor one or more ranges of network addresses wherein the ranges include addresses that are assignable to devices on a network (803, fig 8, col 4, lines 23-37).

Ohno and Tominaga does not expressly teaches configuring at least one routing means on the network to support routing transmissions to at least one of the network addresses. However Fijolek discloses configuring at least one routing means on the network to support routing transmissions to at least one of the network addresses (col 28, lines 63-67 and col 29, lines 1-6). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Ohno and Tominaga with Fijolek. The motivation would have been developing a system, which can dynamically assign network addresses from the address pool when a network device requests a desired service level agreement.

26. As per claim 13, the claim is rejected for the same reasons as claim 12, above. In addition Fijolek discloses creating one or more sub-interfaces on a physical interface of the routing means, wherein each sub-interface is associated with a particular network service provider (col 28, lines 63-67, lines 4-11 and col 29, lines 1-6 and); and

assigning one or more sub-networks to one or more of the sub-interfaces (col 15, lines 39-67 and col 8, lines 49-56).

27. As per claim 14, the claim is rejected for the same reasons as claim 12, above. In addition Fijolek discloses specifying to the address assignor

one or more sub-networks to which any of the one or more defined network address ranges are assignable (col 15, lines 39-67 and col 8, lines 49-56);

reserving a network address for a particular router means associated with a particular sub-network from the one or more sub-networks, wherein the reserved network address is from a defined address range assigned to the particular sub-network (col 15, lines 39-67 and col 8, lines 49-56); and

specifying to the address assignor a particular default routing means for a particular device on the network that is assigned a network address from any of the one or more defined address ranges (pool of network addresses, col 41, lines 4-13, col 15, lines 31-65 and col 9, lines 24-31).

28. As per claim 15, the claim is rejected for the same reasons as claim 12, above. In addition Fijolek discloses the step of defining to an address assignor one or more ranges of network addresses comprises proportionally associating a range of network addresses to routing means based on a previous distribution of addresses associated with the routing means (col 28, lines 63-67, col 29, lines 1-6 and col 4, lines 4-13).

29. As per claim 16, the claim is rejected for the same reasons as claim 12, above. In addition Fijolek discloses defining to an address assignor one or more ranges of network addresses wherein the ranges include addresses

that are assignable by the address assignor to devices on a network and wherein the ranges of network addresses are newly defined to the address assignor network addresses, col 4, lines 4-13, col 15, lines 31-65 and col 9, lines 24-31);

configuring at least one routing means on the network to support routing transmissions to at least one of the network addresses network addresses, col 4, lines 4-13, col 15, lines 31-65 and col 9, lines 24-31);

specifying to the address assignor one or more sub-networks to which any of the one or more defined address ranges are assignable network addresses, col 4, lines 4-13, col 15, lines 31-65 and col 9, lines 24-31);

reserving a network address for a particular router means associated with a particular sub-network from the one or more sub-networks, wherein the reserved network address is from a defined address range assigned to the particular sub-network (network addresses, col 4, lines 4-13, col 15, lines 31-65 and col 9, lines 24-31);

specifying to the address assignor a particular default routing means for a particular device on the network that is assigned a network address from any of the one or more defined address ranges (network addresses, col 4, lines 4-13, col 15, lines 31-65 and col 9, lines 24-31); and

directing the address assignor to discontinue renewing and distributing network addresses from one or more old ranges of network addresses other

than those newly defined to the address assignor (network addresses, col 4, lines 4-13, col 15, lines 31-65 and col 9, lines 24-31).

30. As per claim 17, the claim is rejected for the same reasons as claim 12, above. In addition Fijolek discloses removing from the address assignor the capability to assign to network devices the addresses from the one or more old ranges, and removing from routing means -the capability to support routing transmissions to the network addresses from the one or more old ranges (col 23, lines 41-54).

31. As per claim 18, the claim is rejected for the same reasons as claim 12, above. In addition Fijolek discloses creating one or more sub-interfaces on a physical interface of the routing means, wherein each sub-interface is associated with a particular network service provider; and assigning one or more sub-networks to one or more of the sub-interfaces (network addresses, col 41, lines 4-13, col 15, lines 31-65 and col 9, lines 24-31).

32. As per claim 19, the claim is rejected for the same reasons as claim 12, above. directing an address assignor to discontinue renewing and distributing network addresses from one or more ranges of network addresses (col 23 lines 41-54); and

upon passing of one address lease cycle associated with the address assignor and each network device administered by the address assignor, removing from the address assignor the capability to assign to network devices the addresses from the one or more ranges, and removing from one or more routing means the capability to support routing transmissions to the network addresses from the one or more ranges (col 23, lines 41-54).

33. As per claim 20, Ohno discloses a machine-implemented method for automated management of network address comprising the steps of: receiving condition information (901, fig 9) describing a network address utilization state for triggering an action (902, fig 9, col 9, lines 46-63);

receiving action information describing an action associated with the condition (901, 902, fig 9; determining an address utilization state of a network (900,901,fig 9, col 9, lines 46-63), wherein the address utilization state is based on a percentage, of a certain address space in use; and; and performing the specified action on addresses from the certain address space in response to the address utilization state meeting the condition (902, 901, fig 9, col 9, lines 46-63).

Ohno does not explicitly disclose the address utilization state is based on a percentage of a certain address space, allocated to a network service provider, in use by network access devices used by subscribers of the

network service provider. However, Tominaga discloses the address utilization state is based on a percentage of a certain address space, allocated to a network service provider (Provider A, Fig 12, col 2, lines 38-58), in use by network access devices (Company B, fig 12) used by subscribers of the network service provider (address utilization rate, computing allocation factor, col 22, lines 33-67). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Ohno and Tominaga. The motivation would have been assigning network addresses based on network address utilization rate.

Ohno and Tominaga does not specifically disclose the steps are performed at one or more facilities from a hierarchical group of facilities described, in increasing levels, as a cable head-end facility, a cable regional data center facility, and a cable national data center facility; and wherein the steps are performed at one of the one or more facilities to manage network addresses of facilities on the same hierarchical level. However, Fijolek discloses the steps are performed at one or more facilities from a hierarchical group of facilities described, in increasing levels, as a cable head-end facility, a cable regional data center facility, and a cable national data center facility; and wherein the steps are performed at one of the one or more facilities to manage network addresses of facilities on the same

hierarchical level (elements, fig 1, col 6, lines 1-67 and col 7, lines 1-30). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Ohno and Tominaga with Fijolek. The motivation would have been developing a system, which can dynamically assign network addresses from the address pool when a network device requests a desired service level agreement.

34. As per claim 21, the claim is rejected for the same reasons as claim 20, above. In addition, Fijolek discloses The method of claim 20 wherein the steps are performed at one of the one or more facilities to manage network addresses of facilities on a lower hierarchical level (28, fig 1).

35. As per claims 22, 31, and 32, claims are rejected for the same reasons as claims 20, 1 and 12-16, above.

Response to Arguments

36. Applicant's arguments filed 12/01/2005 have been fully considered but they are not persuasive, therefore rejections to claims 1-32 is maintained.

37. In the remarks applicants argued that:

Argument: A network address utilization state that is based on use of addresses by network device (page 13).

Response: Ohno teaches determining an address utilization state of a network (in-use-address DB, 103, 105, fig 1, in-use address, 57, fig 5, col 2, lines 26-34; col 7, lines 33-36).

Tominaga the address utilization state is based on a percentage of a certain address space **allocated** to a network service provider (elements of Fig 12, col 2, lines 38-58), in use by network access devices used by subscribers of the network service provider (address utilization rate, computing allocation factor, col 22, lines 33-67). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Ohno and Tominaga. The motivation would have been assigning network addresses based on network address utilization rate.

Argument: Using the percentage of actual use of a network address space to trigger an address space to trigger an address management action on that address space (page 13).

Response: In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features

upon which applicant relies (i.e., using the percentage of actual use (not allocation) of a network address space to trigger an address space to trigger an address management action on that address space) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Argument: Performing an action on the addresses from the certain address space to which the address utilization state is associated (page 14).

Response: Ohno teaches performing a specified action on address (600-800, fig 6, col 4, lines 4-21) from the certain address space (subnet fig 5,) in response (102, fig 1) to the address utilization state (storing examination result in elements implies that allocation, reallocation, reconfiguring must have been done fig 5, col 2, lines 26-34).

Argument: Ohno does not discuss any address reconfiguration operation.

Response: Ohno teaches the action is reconfiguring addresses (Dynamic Host Configuration protocol includes configuration and reconfiguration, col 4, lines 10-19) on a particular network including more than one address block, resulting in decreasing the number of address blocks associated with the

particular network (103, 102, 105 fig 1,col 5, lines 60-67 and col 6,lines 1-14, lines 20-26, not known by the DHCP server).

Further, Ohno teaches reconfiguration operations (see discussion, col 2 line 61, contd. col 3, line 1, validity-period).

Argument: Ohno does not teach condition and action from the broadband network access provider.

Response: Ohno teaches in element 114, fig 1 that DHCP server for assigning address from the address space (102, fig 1) employed on WAN network (Some of the commonly known WAN technologies are T1, ATM, DSL).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad A. Siddiqi whose telephone number is (571) 272-3976. The examiner can normally be reached on Monday -Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on (571) 272-

3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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